

SOUTH CAROLINA WATER PLAN

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REFERENCES: *Proceedings of the 1999 Georgia Water Resources Conference*, held March 30-31, 1999, at the University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, the University of Georgia, Athens, Georgia.

Abstract. The sources of water for South Carolina are precipitation (48 inches average per year) and streamflow from adjacent states (8 inches average per year). In addition to the annual replenishment, water is stored mostly in sand and limestone aquifers of the Coastal Plain.

The Water Plan suggests the utilization of water from streams and lakes, where feasible, in preference to using water from aquifers, because of the slow recharge to the aquifers and the high evapotranspiration losses and shorter retention times in streams and lakes.

Minimum flows for streams should be established to protect fish and wildlife, preserve water quality, and maintain navigability. Minimum water levels for aquifers should be established to sustain water availability, control land-surface subsidence, and maintain wetlands ecosystems.

All water withdrawals of 100,000 gallons or more in any day, 1 million gallons in any month, or 10 million gallons in any year should be registered.

Mitigation techniques such as but not limited to restricting withdrawal, diverting water from other areas, withdrawing water from a stream rather than from an aquifer or vice versa, or taking water from water storage facilities such as lakes or reservoirs should be considered if a stream's flow is less than the minimum flow or the static water level is below the Trigger Level in an aquifer or undesired effects are occurring because of water withdrawals.

A water shortage should be declared and administered by the State Drought Response Committee when insufficient water is available to meet all withdrawals and maintain the required minimum flow in streams or water level in aquifers.

EXECUTIVE SUMMARY

The Water Resources Planning and Coordinating Act, §49-3-10, et seq., Code of Laws of South Carolina, 1976, as amended, states that the South Carolina Department of Natural Resources "shall advise and assist the Governor and General Assembly in: (1) Formulating and establishing a comprehensive water resources policy for the State, including coordination of policies and activities among the State

departments and agencies; ..." The Water Resources Division has been working on a State water plan for several years. Phase I was completed in 1983 by its predecessor agency, the South Carolina Water Resources Commission, with the publication of the State Water Assessment, a compendium of information, by river basin, on the State's water resources. In December 1991, the Commission began preparing Phase II of the plan, which contains guidelines that maximize the availability of water from our rivers, lakes, and aquifers. This work was continued by the Department of Natural Resources following the reorganization of State government in July 1994.

The plan contains the Department's recommendations on the guidelines and considerations that it believes the State of South Carolina should adopt at this point in our history for the efficient, equitable, and environmentally responsible management of our water resources. Principal concerns are meeting present and future water demands, sustaining the natural resource, and minimizing damage to it.

The plan provides guidelines and procedures that consider:

- (a) Adequate supplies of water in streams, lakes, and aquifers of suitable quality for domestic, municipal, agricultural, and industrial uses.
- (b) Water-quality facilities and controls to assure water of suitable quality for all purposes.
- (c) Water-navigation facilities.
- (d) Hydroelectric power.
- (e) Flood-damage control or prevention measures including zoning to protect people, property, and productive lands from flood losses.
- (f) Land-stabilization measures.
- (g) Drainage measures, including salinity control.
- (h) Watershed protection and management measures.
- (i) Outdoor-recreational and fish and wildlife opportunities.
- (j) Any other means by which development of water and related land resources can contribute to economic growth and development, the long-term preservation of water resources, and the general well-being of all the people of the State.

The Department has examined the entire range of water issues facing South Carolina, including the effects of long-term withdrawal and use of water. The problems of water shortage have been addressed, as have the problems of integrating the management of streams, lakes, and aquifers. Each of the important purposes for which water is used has been evaluated, and guidelines have been developed for insuring efficient and equitable use of the natural resource. The solutions that are proposed may not be the approaches that are finally adopted, but these ideas are intended to provide awareness and constructive thinking about the water resource issues in South Carolina.

The plan presents general goals and objectives for sustaining the availability of water for current and future use. It also reviews the sources of our water, which are precipitation and streamflow from neighboring states; our stored water; and types of water use. Most importantly, the plan provides considerations and guidelines for how water should be managed in this State. It creates a broad framework that will conserve water supplies.

One of the plan's most critical sections addresses minimum flows for streams and minimum water levels for lakes and aquifers. The minimum streamflows should be maintained for a variety of purposes — protection of water quality, propagation of fish and wildlife, and navigation.

The minimum water levels for aquifers are needed to sustain water availability and quality and to minimize the adverse effects caused by withdrawal of water. Guidelines are provided for the establishment of minimum water levels for aquifers.

All water withdrawals greater than 100,000 gallons per day should be registered. Mitigation techniques to minimize adverse effects due to withdrawal of water, such as but not limited to restricting the withdrawal, diverting water from other areas, withdrawing water from a stream rather than from an aquifer or vice versa, or taking water from water storage facilities such as lakes or reservoirs. The Department of Natural Resources would monitor, as necessary, and publish the status and trends in availability and quality of the water resources of the State.

The plan's final critical component deals with identifying and addressing water shortages. It details how to respond to a water shortage. This section is based upon the existing requirements of the South Carolina Drought Response Act of 1985.

The Department has had the cooperation of, and extensive review and comments from, all levels of water users in South Carolina, from private individuals and organizations to the agricultural community and commercial and industrial users. For this and for the broad range of participation incident to the preparation of this report, the Department is grateful.